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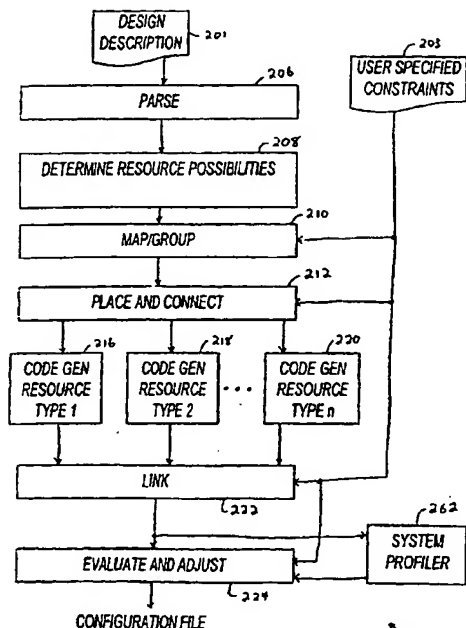
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(54) Title: **CONSTRAINTS-DIRECTED COMPILATION FOR HETEROGENEOUS RECONFIGURABLE ARCHITECTURES**

(57) Abstract: Compilation of a design description for a heterogeneous reconfigurable architecture is influenced by user-specified constraints.



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A. CLASSIFICATION OF SUBJECT MATTER
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B. FIELDS SEARCHED

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>WO 00/38087 A (DASH TECHNOLOGIES LIMITED; SAUL, JONATHAN, MARTIN; AUBURY, MATTHEW, PH) 29 June 2000 (2000-06-29)</p> <p>abstract</p> <p>page 2, line 20 - page 5, line 30</p> <p>page 7, line 10 - line 15</p> <p>page 15, line 10 - page 17, line 10</p> <p>page 21, line 25 - page 23, line 5</p> <p>figure 1</p> <p style="text-align: center;">----- -/-</p>	1-29

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	BLUME H ET AL: "Model-based exploration of the design space for heterogeneous systems on chip" APPLICATION-SPECIFIC SYSTEMS, ARCHITECTURES AND PROCESSORS, 2002. PROCEEDINGS. THE IEEE INTERNATIONAL CONFERENCE ON 17-19 JULY 2002, PISCATAWAY, NJ, USA, IEEE, 17 July 2002 (2002-07-17), pages 29-40, XP010601457 ISBN: 0-7695-1712-9	1-12, 23-29
Y	abstract page 29 - page 33	13-22
X	SCIUTO D ET AL: "Metrics for design space exploration of heterogeneous multiprocessor embedded systems" PROCEEDINGS OF THE 10TH. INTERNATIONAL WORKSHOP ON HARDWARE/SOFTWARE CODESIGN. CODES 2002. ESTES PARK, CO, MAY 6 - 8, 2002, PROCEEDINGS OF THE INTERNATIONAL WORKSHOP ON HARDWARE/SOFTWARE CODESIGN, NEW YORK, NY : ACM, US, 6 May 2002 (2002-05-06), pages 55-60, XP002317354 ISBN: 1-58113-542-4	1-12, 23-29
Y	page 55 - page 60	13-22
Y	PARAMESWARAN S ET AL: "Profiling in the ASP codesign environment" JOURNAL OF SYSTEMS ARCHITECTURE, ELSEVIER SCIENCE PUBLISHERS BV., AMSTERDAM, NL, vol. 46, no. 14, 1 December 2000 (2000-12-01), pages 1263-1274, XP004224625 ISSN: 1383-7621 page 1263 - page 1266	13-22
A	AHMADINIA A ET AL: "Temporal task clustering for online placement on reconfigurable hardware" FIELD-PROGRAMMABLE TECHNOLOGY (FPT), 2003. PROCEEDINGS. 2003 IEEE INTERNATIONAL CONFERENCE ON 15-17 DEC. 2003, PISCATAWAY, NJ, USA, IEEE, 15 December 2003 (2003-12-15), pages 359-362, XP010688364 ISBN: 0-7803-8320-6 the whole document	1-29

INTERNATIONAL SEARCH REPORT
Information on patent family members

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Patent document cited in search report		Publication date		Patent family member(s)	Publication date
WO 0038087	A	29-06-2000	AU	1875200 A	12-07-2000
			GB	2362005 A	07-11-2001
